

AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A polishing apparatus comprising:
a polishing tool;
a substrate holding member to hold a substrate and to press a surface of the substrate against said polishing tool, said substrate holding member including a guide ring for holding an outer periphery of the substrate; and
a first failure detection sensor for detecting a failure of the substrate inside of said guide ring at any time during polishing of the substrate, said first failure detection sensor being disposed at said substrate holding member or in the vicinity of said substrate holding member.
2. (Original) The polishing apparatus according to claim 1, further comprising a second failure detection sensor for detecting a failure of the substrate under said guide ring.
3. (Original) The polishing apparatus according to claim 1, further comprising a second failure detection sensor for detecting a failure of the substrate outside of said substrate holding member.
4. (Original) The polishing apparatus according to claim 1, further comprising a second failure detection sensor for detecting a failure of the substrate under said guide ring, and a third failure detection sensor for detecting a failure of the substrate outside of said substrate holding member.
5. (Withdrawn) The polishing apparatus according to claim 1, wherein said first failure detection sensor comprises a supersonic sensor.
6. (Withdrawn) The polishing apparatus according to claim 1, wherein said first failure detection sensor comprises a supersonic sensor to measure a distance between said supersonic sensor and an object or to measure a sound pressure from the object.

7. (Withdrawn) The polishing apparatus according to claim 1, wherein said first failure detection sensor comprises a radiation temperature sensor.

8. (Withdrawn) The polishing apparatus according to claim 1, wherein said first failure detection sensor is to detect a variation in electrostatic capacity of a condenser.

9. (Original) The polishing apparatus according to claim 1, wherein said first failure detection sensor has a piezoelectric element that is to abut the substrate.

10. (Original) The polishing apparatus according to claim 1, further comprising a control unit to stop said polishing tool or said substrate holding member when said first failure detection sensor detects a failure of the substrate.

11. (Currently amended) A polishing apparatus comprising:

a polishing tool;

a substrate holding member to hold a substrate and to press a surface of the substrate against said polishing tool; and

at least two failure detection sensors for detecting a failure of the substrate in a radial direction of said substrate holding member at any time during polishing of the substrate.

12. (Original) The polishing apparatus according to claim 11, wherein said at least two failure detection sensors have a piezoelectric element that is to abut the substrate.

13. (Original) The polishing apparatus according to claim 11, wherein said substrate holding member includes a guide ring for holding an outer periphery of the substrate, and wherein said at least two failure detection sensors are to detect a failure of the substrate inside of said guide ring.

14. (Original) The polishing apparatus according to claim 11, wherein said substrate holding member includes a guide ring for holding an outer periphery of the substrate, and wherein one of said at least two failure detection sensors is to detect a failure of the substrate under said guide ring and the other of said at least two detection sensors is to detect a failure of the substrate inside of said guide ring.

15. (Original) A polishing apparatus comprising:
a polishing tool;
a substrate holding member to hold a substrate and to press a surface of the substrate against said polishing tool;
a first failure detection sensor for detecting a failure of the substrate inside of said substrate holding member; and
a second failure detection sensor for detecting a failure of the substrate outside of said substrate holding member.

16. (Original) The polishing apparatus according to claim 15, wherein said substrate holding member includes a guide ring for holding an outer periphery of the substrate, and wherein said first failure detection sensor is to detect a failure of the substrate under said guide ring.

17. (Original) The polishing apparatus according to claim 15, wherein said substrate holding member includes a guide ring for holding an outer periphery of the substrate, and wherein said first failure detection sensor is to detect a failure of the substrate inside of said guide ring.

18. (Withdrawn) The polishing apparatus according to claim 15, wherein one of said first and second failure detection sensors has a contact member and a measuring system for measuring an electrical connection between said contact member and said polishing tool.

19. (Withdrawn) The polishing apparatus according to claim 15, wherein said first failure detection sensor comprises a displacement sensor for measuring a variation in position of said

substrate holding member.

20. (Withdrawn) The polishing apparatus according to claim 15, wherein said first failure detection sensor comprises a vibration sensor, a distortion sensor or a pressure sensor.

21. (Withdrawn) A polishing apparatus comprising:

a polishing tool;

a substrate holding member to hold a substrate and to press a surface of the substrate against said polishing tool; and

a failure detection sensor for detecting a failure of the substrate;

wherein said failure detection sensor is a displacement sensor for measuring a variation in position of a top surface of said substrate holding member.

22. (New) A polishing apparatus comprising:

a polishing tool;

a substrate holding member to hold a substrate and to press a surface of the substrate against said polishing tool;

a first failure detection sensor disposed inside of said substrate holding member for detecting a failure of the substrate; and

a second failure detection sensor disposed outside of said substrate holding member for detecting a failure of the substrate.

23. (New) The polishing apparatus according to claim 1, wherein said first failure detection sensor is to detect a failure of the substrate based on

(i) comparison of a value measured by said first failure detection sensor, during polishing of the substrate, with a threshold value, or

(ii) comparison of a waveform pattern in a value measured by said first failure detection sensor, during polishing of the substrate, with a predetermined waveform pattern.

24. (New) The polishing apparatus according to claim 4, further comprising:
a control unit to compare values measured by said first, second and third failure detection sensors with threshold values, respectively, and determine a failure of the substrate while polishing the substrate in the event that any one of the values measured by said first, second and third failure detection sensors exceeds a respective one of the threshold values.

25. (New) The polishing apparatus according to claim 4, further comprising:
a control unit to compare waveform patterns in values measured by said first, second and third failure detection sensors with predetermined waveform patterns, respectively, and determine a failure of the substrate while polishing the substrate in the event that any one of the waveform patterns in the values measured by said first, second and third failure detection sensors agrees with a respective one of the predetermined waveform patterns.

26. (New) The polishing apparatus according to claim 11, further comprising:
a control unit to compare values measured by each of said at least two failure detection sensors with threshold values, respectively, and determine a failure of the substrate while polishing the substrate in the event that any one of the values measured by said each of said at least two failure detection sensors exceeds a respective one of the threshold values.

27. (New) The polishing apparatus according to claim 11, further comprising:
a control unit to compare waveform patterns in values measured by each of said at least two failure detection sensors with predetermined waveform patterns, respectively, and determine a failure of the substrate while polishing the substrate in the event that any one of the waveform patterns in the values measured by said each of said at least two failure detection sensors agrees with a respective one of the predetermined waveform patterns.

28. (New) The polishing apparatus according to claim 15, further comprising:
a control unit to compare values measured by said first and second failure detection sensors with threshold values, respectively, and determine a failure of the substrate while polishing the

substrate in the event that any one of the values measured by said first and second failure detection sensors exceeds a respective one of the threshold values.

29. (New) The polishing apparatus according to claim 15, further comprising:
a control unit to compare waveform patterns in values measured by said first and second failure detection sensors with predetermined waveform patterns, respectively, and determine a failure of the substrate while polishing the substrate in the event that any one of the wave form patterns in the values measured by said first and second failure detection sensors agrees with a respective one of the predetermined waveform patterns.

30. (New) The polishing apparatus according to claim 1, wherein said first failure detection sensor is to detect a breaking or jumping of the substrate.